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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/699,985	Applicant(s) OSTROMEK ET AL.	
	Examiner Bernard Krasnic	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. The Request for Continued Examination filed 9/06/2007 have been entered and made of record.

2. The application has pending claims 1-18.

3. In response to the amendments filed on 9/06/2007:

The "Objections to the specification" have been entered and therefore the Examiner withdraws the objections to the specification.

4. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection because of the Request for Continued Examination (RCE).

5. Applicant's arguments filed 9/06/2007 have been fully considered but they are not persuasive.

The Applicant alleges, "1. Independent claims 1, 8, 15, and 16 ..." in pages 10-11, and states respectively that Spight does not teach the claimed language of *metric* being generated *in accordance with* optically transformed light because the Applicant believes it makes little sense that something can be generated in accordance with itself. Firstly the Examiner disagrees and does believe that Spight teaches this claimed language because even if something makes little sense, it is still possible. The assumption is that

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the two [transform and metric] are equivalent; "generated in accordance with" is being interpreted as A is generated in accordance with A where the generation just takes the original input and outputs it. Therefore the Examiner is not ignoring the claim language of "in accordance with", but rather reading the broad interpretation that the original input could equivalently be the output. Secondly the Examiner disagrees and does believe that Spights 2D complex Fourier Transform [see Spight, col. 4, lines 27-37] produces a metric since it itself produces a matrix because any two dimensional data signal is a type of matrix; a matrix is data in the form of a rectangular array [2D array] of numbers or data. But to clarify the art rejection, the Examiner has incorporated the teachings of a new secondary reference Clune et al (US 7,187,810 B2) to help show that the claimed limitations would have been obvious to one of ordinary skill in the art at the time the invention was made. These arguments will further be discussed in the Art Rejection below.

The Applicant alleges, "2. Dependent Claims 2-5, 7, 9-12, and 14 ..." in pages 11-12, and states respectively that since Spight does not teach all the claimed limitations of independent claims 1 nor 8, the claim rejections for the dependent claims should be withdrawn. The Applicant also states respectively that Spight does not disclose the amended limitation that the first and second optical transforms each target different aspects of the image information. Firstly the Examiner disagrees because the Examiner still believes Spight teaches the claimed limitations of the independent claims as discussed above and therefore the claim rejections on the dependent claims are not withdrawn. Secondly the Examiner disagrees because the new secondary reference

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Clune does teach the amended limitation; these arguments will further be discussed in the Art Rejection below.

The Applicant alleges, "B. Rejection over Spight and further in view of Schneider ..." in pages 13-16, and states respectively that there is insufficient motivation to combine the Spight and Schneider references. In response to applicant's argument that the two references Spight and Schneider are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Schneider discloses pattern recognition using the two dimensional Fourier transform for a given scene, both Schneider and Spight disclose using the two dimensional Fourier transform and therefore the two art references are definitely in the same field of endeavor. Therefore Schneider's teachings of using pattern recognition using the Fourier Transform to include the capability of detecting a target using Spights processed metric [Spight teaches taking the square sum of the two metrics  $IR(x,y)$  and  $Fo(x,y)$ ] in order to incorporate the capability of performing pattern recognition [see Schneider, col. 25, lines 16-25] is still applicable and maintained. Even if the references of combination are not in the same field of endeavor, the combination still may hold true when a person of ordinary skill can implement a predictable result. "When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a

predictable variation, 35 U.S.C. 103 likely bars its patentability"; incorporating Schneider into Spight is a predictable variation of the well known technique to derive the instant invention. The obviousness rationale advanced hereinabove is consistent with the criteria articulated in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Schneider discloses the motivation to incorporate the teachings. Schneider's teachings of using pattern recognition using the Fourier Transform to include the capability of detecting a target using Spight's processed metric [Spight teaches taking the square sum of the two metrics  $IR(x,y)$  and  $Fo(x,y)$ ] in order to incorporate the capability of performing pattern recognition [see Schneider, col. 25, lines 16-25] is still applicable and maintained. The Applicant also argues that Schneider's system utilizes mechanical ultrasonic waves whereas Spight utilizes optical waves and therefore there is not sufficient motivation to combine. However, as discussed above, there is still motivation to combine. But for argument purposes and to further clarify the teachings of the art to one of ordinary skill in the art, an ultrasonic system can easily be substituted for an X-Ray system which is an electro-optical system [see Carrot et al (US 6,909,792 B1), col. 1, lines 25-28,

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lesions in the breast are targeted using an ultrasonography or equivalently using the X-Ray, targets are easily tracked using various techniques in the art]. Therefore, the claim rejections to claim 6 and similarly to claim 13 are maintained. In response to Applicant's argument that there is no expectation of success, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The Examiner still believes that the Schneider reference could be applicable as an art rejection to claims 6 and 13, but will use the Clune reference instead for the art rejection toward claims 6 and 13 as will be discussed below.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Section IV.C, reads as follows:

While abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be. In evaluating whether a claim meets the requirements of section 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, natural phenomenon, or law of nature, rather than for the abstract idea, natural phenomenon, or law of nature itself.

For claims including such excluded subject matter to be eligible, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. *Diehr*, 450 U.S. at 187, 209

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USPQ at 8 ("application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

The claimed invention "transforms" an article or physical object to a different state or thing.

The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

7. Claim(s) 1-6, 8-13, and 15 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim(s) 1-6, 8-13, and 15 is/are drawn to a computer implemented process that merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts.

In order for a claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result" *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). A practical application can be achieved through recitation of "a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or "limited to a practical application within the technological arts" (MPEP 2106.IVB2(b)). Currently, claim(s) 1-6, 8-13, and 15 meet neither of these criteria. **The Applicant is suggested to** *incorporate claim 7 into claim 1, incorporate claim 14 into claim 8, and incorporate similar language into claim 15 because after the abstract mathematical manipulation of taking a Fourier transform, manipulating it, and taking the inverse Fourier transform, a display of the processed metric would definitely show some type of statutory result which shows a practical*



*application with a useful, concrete, and tangible result in the technological arts..*

In order to for the claimed process to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

- 1 The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106 IVB2(b)(i)).
- 2 A recitation of a physical transformations outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106 IVB2(b)(i)).
- 3 A direct recitation of a practical application in the technological arts (MPEP 2106 IVB2(b)(ii)).

Applicant is also advised to provide a written explanation of how and why the claimed invention (either as currently recited or as amended) produces a useful, concrete and tangible result.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1-2, 4-9, and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spight et al (US 4,462,046, as applied in previous Office Action) in view of Clune et al (US 7,187,810 B2).

Re Claim 1: Spight discloses a method / machine vision system for processing image information (see Fig. 1, title of invention, col. 1, lines 46-49 and 67-68), comprising receiving light / incoherent light signals (11, 13) or coherent light signals ( $o(x,y)$  and  $r(x,y)$ ) comprising image information / scene information (see Fig. 1, col. 2, lines 35-57, col. 4, lines 27-28 and 44-45); performing a first optical transform / Fourier Transform via an optical lens system (30) on the light to yield a first optically transformed light /  $Fo(x,y)$  (see Fig. 1, col. 2, lines 50-57, col. 4, lines 27-37); performing a second optical transform / Fourier Transform via an optical lens system (32) on the light to yield a second optically transformed light /  $IR(x,y)$  (see Fig. 1, col. 2, lines 50-57, col. 4, lines 43-50); generating a first metric /  $Fo(x,y)$  in accordance with the first optically transformed light (see Fig. 1, the metric is the two dimensional Fourier Transformed signal  $Fo(x,y)$  itself); generating a second metric /  $IR(x,y)$  in accordance with the second optically transformed light (see Fig. 1, the metric is the two dimensional Fourier Transformed signal  $IR(x,y)$  itself); processing the first metric and the second metric to yield a processed metric / square sum of  $IR(x,y)$  and  $Fo(x,y)$  (see Fig. 1, col. 2, lines 50-64, col. 4, lines 56-63, col. 5, lines 2-19); and performing an inverse optical transform / Inverse Fourier Transform via an optical lens system (36) on the processed metric to process the image information of the light (see Fig. 1, col. 2, lines 64-68, col. 3, lines 1-6, col. 4, lines 42-48).

However, Spight does not specifically disclose (see the discussions in pages 2-3 of this Office Action) generating the first metric in accordance with the first optically

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transformed light and generating the second metric in accordance with the second optically transformed light.

Clune discloses generating the first metric /  $F_i(u,v)$  2D data array matrix (262) in accordance with the first optically transformed light / Fast Fourier Transform FFT (260) [Spight teaches the first optical transformed light which is similar to Clune's first digital Fast Fourier Transform FFT] and generating the second metric /  $F_j(u,v)$  2D data array matrix (276) in accordance with the second optically transformed light / Fast Fourier Transform FFT (274) [Spight teaches the second optical transformed light which is similar to Clune's second digital Fast Fourier Transform FFT] (see Clune, Figs. 2A and 2B-2, col. 11, lines 40-67, col. 12, lines 1-29). Clune also yields a processed metric (278) from the first (262) and second (276) metric and performs an inverse transform (280) [Spight teaches the inverse optical transform which is similar to Clune's digital Inverse Fast Fourier Transform iFFT] on the processed metric (278) similar to Spight (see Clune, Figs. 2A and 2B-2, col. 11, lines 40-67, col. 12, lines 1-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spight's method by using Clune's teachings by including a first and second metric generator between Spight's optical transform and Spight's yield processor in order to display the image after being transformed to improve the validation for the correction of a misalignment between at least two images/signals (see Clune, Figs. 2A and 2B-2, col. 5, lines 63-67).

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Re Claim 2: Spight further discloses the first optical transform / Fourier Transform via an optical lens system (30) is substantially similar to the second optical transform / Fourier Transform via an optical lens system (32) (see Fig. 1, col. 2, lines 54-57, both the optical lens systems perform Fourier transform).

Re Claim 4: Spight further discloses the first optical transform comprises a first Fourier transform / Fourier Transform via an optical lens system (30); and the second optical transform comprises a second Fourier transform / Fourier Transform via an optical lens system (32) (see Fig. 1, col. 2, lines 54-57, both the optical lens systems perform Fourier transform).

Re Claim 5: Spight further discloses selecting first data /  $F_o(x,y)$  from the first metric; selecting second data /  $I_R(x,y)$  from the second metric; and fusing / square sum of  $I_R(x,y)$  and  $F_o(x,y)$  the first data and the second data to yield the processed metric / square sum of  $I_R(x,y)$  and  $F_o(x,y)$  (see Fig. 1, col. 2, lines 50-64, col. 4, lines 56-63, col. 5, lines 2-19). Clune also further discloses selecting first data /  $F_i(u,v)$  from the first metric (data array of 262), selecting second data /  $F_j(u,v)$  from the second metric (data array of 276); and fusing / cross correlation (278) the first data /  $F_i(u,v)$  and the second data /  $F_j(u,v)$  to yield the processed metric / correlated output of 278 (see Clune, Figs. 2A and 2B-2, col. 11, lines 40-67, col. 12, lines 1-29).

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Re Claim 6: Clune further discloses generating the processed metric / correlation (218, 278) in response to the first metric (data array of 262) and the second metric (data array of 276); and detecting a target / measure of misalignment using the processed metric / correlation (218, 278) (see Clune, Figs. 2A and 2B-2, col. 11, lines 65-67, col. 12, lines 1-11, the cross correlation 278 fuses or correlates [product] the two data array's of 262 and 276 to detect / determine a target / measure of misalignment).

Re Claim 7: Spight further discloses generating an image from the processed metric (see col. 2, line 68, col. 3, lines 1-6); and displaying / monitor (200) the image (see Figs. 1 and 4, col. 3, lines 1-6).

As to claims 8-9 and 11-14, the claims are the corresponding system claims to claims 1-2 and 4-7. The discussions are addressed with regard to claims 1-2 and 4-7.

As to claim 15, the claim is the corresponding means plus function system claim to claim 1. The discussions are addressed with regard to claim 1.

The limitations, as recited in claim 15, "means for receiving light" in line 3, "means for performing" in lines 5 and 7, "means for generating" in lines 9 and 11, "means for processing" in line 13, and "means for performing" in line 15, invoke 35 USC 112, 6<sup>th</sup> paragraph.

Re Claim 16: The limitation "a procedure selected from the group of a first procedure and a second procedure" is referred to as a Markush group and this Markush group

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recites choosing either the first procedure or the second procedure to process the first metric and the second metric. Therefore, while considering the first procedure for fusing and considering wherein the first optical transform is substantially similar to the second optical transform, all the limitations respectively are analyzed and taught by Spight, as modified by Clune, in the same manner as Spight, as modified by Clune, taught claims 1-2, 4-7 above.

As to claim 17, the claim is the corresponding system claim to claim 1 respectively. The discussions are addressed with regard to claim 1. To briefly further clarify the teachings of the system components: Spight teaches the first (30, see Spight, Fig. 1) and second (32, see Spight, Fig. 1) optical transformers; Clune teaches the first sensor and first processor (262, see Clune, Fig. 2B-2, 262 senses the transformed data and processes the data into a data matrix array for displaying purposes); Clune teaches the second sensor and second processor (276, see Clune, Fig. 2B-2, 276 senses the transformed data and processes the data into a data matrix array for displaying purposes); Spight and Clune each teach a processor for forming a fused image (34, see Spight, Fig. 1, fusion is done by a summation processor) (278, see Clune, Fig. 2B-2, fusion is done by a correlation processor); Spight and Clune each teach an inverse transformer (36, see Spight, Fig. 1) (280, see Clune, Fig. 2B-2); Spight teaches a display (200, see Spight, Fig. 4).

The result of the Spight and Clune combination would be completely predictable in that this digital type system would still produce a correlation degree between the two

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signals/images. Furthermore, one skilled in the art would be motivated to utilize this updated computer implemented system because it is more stable and cost effective over an analog type system. The obviousness rationale advanced hereinabove is consistent with the criteria articulated in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

Re Claim 18: Spight further discloses wherein said first (30) and second (32) optical transforms are selected from the group consisting of: a Fourier transform / Fourier transform (see Fig. 1, col. 2, lines 54-57, both the optical lens systems perform Fourier transform); and a geometric transform.

10. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spight, as modified by Clune, as applied to claims 1 and 8 above, and further in view of Evans et al (US 5,537,669). The teachings of Spight as modified by Clune have been discussed above.

Re Claim 3: Spight further discloses the first optical transform / Fourier Transform via an optical lens system (30) is compatibly different from the second optical transform / Fourier Transform via an optical lens system (32) (see Fig. 1, col. 4, lines 33-37).

Although the compatibly different limitation is silent in Spight, it is an inherent feature because each of the two lenses 30 and 32 could have a different focal length making them compatibly different. As discussed in the rejection for claim 3, the Fourier

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transform lenses 30 and 32 [see Spight, Fig. 1] are compatibly different because no two lenses could be exactly the same; there will always be some type of micro-difference if no bigger difference could be noticed. This little difference between the two Fourier transform lenses 30 and 32 results in two "compatibly different" Fourier transforms. Lens 30 is used as the first optical transform [Fourier Transform via lens] and lens 32 is used as the second compatibly different [lenses compatibly different by structure] optical transform [Fourier Transform via lens].

However, Spight as modified by Clune, don't specifically disclose that the first and second optical transforms each target different aspects of the image information [they teach that the same spectrum is targeted using the same Fourier Transform].

Evans discloses wherein the first transform / Fourier transform (6, see Evans, Fig. 1, col. 4, lines 49-51) is compatibly different from the second transform / Canonical transform (6', see Evans, Fig. 1, col. 4, lines 49-51), such that the first and second transforms each target different aspects / different spectral results of the image information (see Evans, col. 4, lines 49-51, each of the two different transforms produce different spectral results which show that different spectral aspects of the image are targeted) [Spight teaches the first and second optical transform which is similar to Evans first and second digital Fourier-like Transforms].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Spight, as modified by Clune, using Evans' teachings by including to Spights first and second optical transforms the ability to target and analyze different spectral aspects of the image by using the Canonical and



Fourier transforms in order to further improve the misalignment or offsets of the inputted images (see Evans, col. 2, lines 57-64).

As to claim 10, the claim is the corresponding system claim to claim 3. The discussions are addressed with regard to claim 3.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic  
November 1, 2007



JINGGE WU  
SUPERVISORY PATENT EXAMINER